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08/948,124

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
08/948,124	10/09/97	REINHERZ	DFCI-522A

EXAMINER: E

HM22/0203

CAROLYN S. ELMORE
HAMILTON BROOK SMITH AND REYNOLDS
TWO MILITIA DRIVE
LEXINGTON MA 02173

ART UNIT	PAPER NUMBER
1642	11

DATE MAILED: 02/03/99

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire — 3 — month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-52 is/are pending in the application.
Of the above, claim(s) 1-40, 42, 44, 46-52 is/are withdrawn from consideration.
☐ Claim(s) _____ is/are allowed.
☒ Claim(s) 41, 43, 45 is/are rejected.
☐ Claim(s) _____ is/are objected to.
☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☑ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
☐ The specification is objected to by the Examiner.
☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.
☐ received in Application No. (Series Code/Serial Number) _____.
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of Reference Cited, PTO-892
☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). (6 sheets)
☐ Interview Summary, PTO-413
☒ Notice of ~~Draftperson's Patent Drawing~~ Review, PTO-948 informal drawings submitted
☐ Notice of Informal Patent Application, PTO-152
☒ Notice of claim for priority submitted elsewhere.

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

★ U.S. GPO: 1998-404-496/40517

DETAILED ACTION

1. Applicant's election of Group VIII (claims 41, 43, 45) in Paper No.9 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MEP. § 818.03(a)).

It is noted that claim 46 was included in Group VIII as well as in Group X in the last office action. However, that was an inadvertent error as the subject matter of claim 46 (a method of enhancing apoptosis) belongs in Group X. The presently elected invention is drawn to a method of identifying enhancers of caspase activity.

Priority

2. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 as follows:

> An application in which the benefits of an earlier application are desired must be copending with the prior application or with an application similarly entitled to the benefit of the filing date of the prior application.

In this case, the instant Application has a filing date of October 9, 1997 and the claimed parent was abandoned on July 10, 1997.

Specification

3. The abstract of the disclosure is objected to because it does not fully and accurately reflect the elected invention . Correction is required. See MEP. § 608.01(b).

4. The title of the invention is not descriptive of the elected invention. A new title is required that is clearly indicative of the invention to which the claims are directed.

5. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 41, 43, 45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Claims 41, 43, 45 are dependent from a non elected claim. The rejection can be obviated by amending the claims to be independent of claim 1, and including the limitations of the parent claim 1 into the amended claims.

B. Claim 43 is indefinite in that it recites a method to identify an agent that enhances the caspase activity of claim 1 which is an isolated caspase or active fragments or derivatives thereof, wherein the method comprises contacting thymocytes or cell lysate thereof comprising the caspase and identifying the enhancement of caspase activity. It is unclear which "caspase" is being referred to in the determination of enhancement of activity, and also how isolated caspase is comprised in a cell or cell lysate.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 41 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gurtu et al (1997).

The claims are drawn to a method of identifying agents that enhance caspase activity (wherein the caspase activity is considered to be its ability to function as a protease and also is associated with apoptosis) and a method of enhancing the caspase activity by the agent that is identified.

Gurtu et al teach a method of quantitatively assaying caspase-3 activity, wherein the caspase is associated with apoptosis (page 98, column 1 and Abstract), using a fluorometric or colorimetric tag attached to a substrate of caspase (page 99, column 1, materials and methods; and Figure 1). Further, Gurtu et al teach the induction or increase in the caspase activity by various agents (page 100, column 2 paragraph 2; and Figure 3). Gurtu et al do not teach the methods using isolated caspase or procaspase or active fragments and derivatives thereof. However, it would have been prima facie obvious to one of ordinary skill in the art at the time of the claimed invention to substitute the cell lysate employed by Gurtu et al with an isolated caspase, procaspase or active fragments and derivatives thereof since one of ordinary skill in the art would not expect the caspases from these sources to have different activities. One of ordinary skill in the art would be motivated to use isolated caspase, procaspase or active fragments and

derivatives thereof because the use of isolated proteases in an assay to identify agents that would enhance their activity would produce more accurate and quantitative results and would be more reproducible from assay to assay with better standardization. Gurtu et al also provides a reasonable expectation of success in the identification of agents that enhance apoptosis as demonstrated in their experiments.

10. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gurtu et al (1997) in view of Fearnhead et al (1995).

The claims are drawn to a method of identifying agents that enhance caspase activity (wherein the caspase activity is considered to be its ability to function as a protease and also is associated with apoptosis)wherein the caspase is from a thymocyte or a cell lysate thereof comprising caspase or procaspase.

Gurtu et al teach a method of quantitatively assaying caspase-3 activity in lysates of 32D cells, wherein the caspase is associated with apoptosis (page 98, column 1 and Abstract), using a fluorometric or colorimetric tag attached to a substrate of caspase (page 99, column 1, materials and methods; and Figure 1). Further, Gurtu et al teach the induction or increase in the caspase activity by various agents (page 100, column 2 paragraph 2; and Figure 3) and that caspases are also include the ICE proteins (i.e. ICE proteins or caspases are different names for the same proteins). Gurtu et al do not teach the methods using thymocytes or cell lysates thereof or that thymocytes possess caspase activity

Fearnhead et al teach that IC-like proteases (also known as caspases) are involved in thymocyte apoptosis (see Abstract; and pages 285-286).

Thus it would have been prima facie obvious to one of ordinary skill in the art at the time of the claimed invention to substitute the cell lysate employed by Gurtu et al with thymocytes or a cell lysate thereof, since one of ordinary skill in the art would not expect the caspases from these sources to have different activities and also would not expect that cell lysates would be different.

One of ordinary skill in the art would be motivated to use the thymocytes as a source since thymocytes are involved in immune regulation, in self-recognition events and implicated in mechanisms of clonal deletion by apoptotic pathways. The teachings of Fearnhead et al provides the motivation as well as a reasonable expectation of success that studies of apoptosis in thymocytes could be done using the methods of Gurtu et al who teach assays to identify agents that can enhance caspase activities.

11. No claim is allowed.

12. Papers related to this application may be submitted to Group 1640 by facsimile transmission. Papers should be faxed to Group 1640 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 308-4242 or (703) 305-3014.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Geetha P. Bansal whose telephone number is (703) 305-3955. The examiner can normally be reached on Mondays to Thursdays from 7:00am to 4:30pm and alternate Fridays from 7:00am to 3:30pm. A message may be left on the examiner's voice mail service.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula Hutzell, can be reached on (703) 308-4310.

14 Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Geetha P. Bansal
January 29, 1999.